

CLAIMS

1. An alkaline battery comprising a positive electrode, a negative electrode and an alkaline electrolyte, said positive electrode including a positive electrode material mixture containing electrolytic manganese dioxide and nickel oxyhydroxide,

wherein said nickel oxyhydroxide comprises a crystal in which at least Mg is dissolved, and has a tap density determined after 500 taps of not less than 2 g/cm³, an average particle size based on volume of 8 to 20 μ m, and an average nickel valence of 2.95 to 3.05.

2. The alkaline battery in accordance with claim 1, wherein the amount of Mg is 0.1 to 7 mol% relative to the total amount of Ni and Mg contained in said nickel oxyhydroxide.

3. The alkaline battery in accordance with claim 1, wherein the amount of electrolytic manganese dioxide is 20 to 90 wt% relative to the total amount of said electrolytic manganese dioxide and said nickel oxyhydroxide contained in said positive electrode material mixture, and the amount of said nickel oxyhydroxide is 10 to 80 wt% relative to said total amount.

4. The alkaline battery in accordance with claim 1, wherein said positive electrode material mixture further comprises a graphite conductive material, and

the amount of said graphite conductive material is 3 to 10 wt% relative to the total amount of said electrolytic manganese dioxide, said nickel oxyhydroxide and said graphite conductive material contained in said positive electrode material mixture.

5. The alkaline battery in accordance with claim 4, wherein said positive electrode material mixture further comprises at least one rare-earth oxide selected from the group consisting of Y_2O_3 , Er_2O_3 , Tm_2O_3 , Yb_2O_3 and Lu_2O_3 , and the amount of said rare-earth oxide is 0.1 to 2 wt% relative to the total amount of said electrolytic manganese dioxide, said nickel oxyhydroxide, said graphite conductive material and said rare-earth oxide contained in said positive electrode material mixture.

6. An alkaline battery comprising a positive electrode, a negative electrode and an alkaline electrolyte, said positive electrode comprising a positive electrode material mixture containing electrolytic manganese dioxide and nickel oxyhydroxide,

wherein said nickel oxyhydroxide comprises a crystal in which at least Mg as the essential component and at least one element M selected from the group consisting of Co, Zn and Mn are dissolved, and

said nickel oxyhydroxide has a tap density determined after 500 taps of not less than 2 g/cm^3 , an average particle size based on volume of 8 to 20 μm , and an average

nickel valence of 2.95 to 3.05.

7. The alkaline battery in accordance with claim 6, wherein the amount of Mg is not less than 0.1 mol% relative to the total amount of Ni and Mg contained in said nickel oxyhydroxide, and

the total amount of Mg and element M is not greater than 7 mol% relative to said total amount.

8. The alkaline battery in accordance with claim 6, wherein the amount of said electrolytic manganese dioxide is 20 to 90 wt% relative to the total amount of said electrolytic manganese dioxide and said nickel oxyhydroxide contained in said positive electrode material mixture, and

the amount of said nickel oxyhydroxide is 10 to 80 wt% relative to said total amount.

9. The alkaline battery in accordance with claim 6, wherein said positive electrode material mixture further comprises a graphite conductive material, and

the amount of said graphite conductive material is 3 to 10 wt% relative to the total amount of said electrolytic manganese dioxide, said nickel oxyhydroxide and said graphite conductive material contained in said positive electrode material mixture.

10. The alkaline battery in accordance with claim 9, wherein said positive electrode material mixture further comprises at least one rare-earth oxide selected from the group consisting of Y_2O_3 , Er_2O_3 , Tm_2O_3 , Yb_2O_3 and Lu_2O_3 , and

the amount of said rare-earth oxide is 0.1 to 2 wt% relative to the total amount of said electrolytic manganese dioxide, said nickel oxyhydroxide, said graphite conductive material and said rare-earth oxide contained in said positive electrode material mixture.